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usculis; natibus prominentibus; epidermide rufo-fusca, subsquamosa, obsolete radiata, dentibus cardinalibus parvis corrugatisque, lateralibus longis, lamellatis subcurvisque; margarita vel alba vel purpurea vel salmonea et valde iridescente.

Hab.—Catawba River, N. C., C. M. Wheatley.

UNIO DATUS.—Testa lævi, lato-elliptica, valde compressa, inæquilaterali, postice obtuse angulata, antice rotundata; valvulis subcrassis, antice parum crassioribus; natibus prominulis; epidermide rufo-fusca, micanti, obsolete radiata; dentibus cardinalibus parvisusculis, sulcatis erectisque; lateralibus prelongis, subcurvis, lamellatis corrugatisque; margarita nubila, salmonea et purpurea et valde iridescente.

Hab.—Paw Creek, Beaver Creek and Long Creek, N. C., C. M. Wheatley.

UNIO BEAVERENSIS.—Testa lævi, oblonga, compressa, ad latere planulata, inæquilaterali, postice obtuse angulata, antice rotunda; valvulis subcrassis, antice parum crassioribus; natibus subprominentibus; epidermide rubiginosa, micanti, obsolete radiata; dentibus cardinalibus longis, crassis, lamellatis subrectisque; margarita vel alba vel purpurea et valde iridescente.

Hab.—Beaver and Long Creeks, N. C., C. M. Wheatley; Carter's Creek, Ga., J. Postell.

UNIO NUBILUS.—Testa lævi, oblonga, subcompressa, inæquilaterali, postice subbiangulari, antice rotundata; valvulis crassis, antice crassioribus; natibus prominulis; epidermide tenebroso-fusca, eradiata; dentibus cardinalibus crassis, sulcatis corrugatisque; lateralibus crassis, longis, corrugatis lamellatisque; margarita nubila, salmonea et purpurea et iridescente.

Hab.—Paw Creek, Mecklenberg Co., N. C., C. M. Wheatley.

UNIO PAWENSIS.—Testa lævi, suboblonga, inflata, valde inæquilaterali, postice subbiangulari, antice rotundata; valvulis subcrassis; natibus subprominentibus, subtimidis; epidermide tenebroso-fusca, squamosa, eradiata; dentibus cardinalibus parvis, corrugatis, subconicis; lateralibus longis, lamellatis subcurvisque; margarita vel alba vel purpurea et iridescente.

Hab.—Paw Creek, Beaver Creek, and Catawba River, N. C., C. M. Wheatley.

UNIO HUMEROSUS.—Testa lævi, elliptico-oblonga, compressa, ad latere planulata, inæquilaterali, postice obtuse biangulari, antice rotunda; valvulis subcrassis, antice crassioribus; natibus prominulis; epidermide rufo-fusca, obsolete radiata; dentibus cardinalibus grandibus, sulcatis, partitis; lateralibus prelongis, lamellatis corrugatisque; margarita salmonis colore tincta et valde iridescente.

Hab.—Charlotte, Mecklenberg Co., N. C., C. M. Wheatley.

UNIO GENUINUS.—Testa lævi, elliptica, subinflata, inæquilaterali, postice subbiangulata, antice rotundata; valvulis subtenuibus, antice crassioribus; natibus subprominentibus; epidermide luteola, valde radiata; dentibus cardinalibus erectis, pyramidatis, in utroque valvulo duplicibus; lateralibus longis, subcurvis lamellatisque: margarita alba et iridescente.

Hab.—Bissel's Pond, Charlotte, N. C., C. M. Wheatley.

Description of two new species of UNIONIDÆ from Equador.

BY ISAAC LEA.

UNIO ORTONII.—Testa plicata, lato-elliptica, compressa, valde inæquilaterali, postice angulata, antice rotundata; valvulis crassis, antice crassioribus; natibus prominulis; epidermide rufo-fusca, eradiata; dentibus cardinalibus multipartitis, flexuosis curtisque; lateralibus prelongis, curvatis corrugatisque; margarita albida et valde iridescente.

Hab.—River Napo, Equador, S. Am., Prof. Orton.
1868.]

ANODONTA NAPOËNSIS.—Testa lævi, oblongo-elliptica, subcompressa, valde inæquilaterali, antice et postice rotundata; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fusca, encarpiformi, flexuosa, obsolete radiata; margarita pallido-viridi, non iridescente.

Hab.—River Napo, Equador, S. Am, Prof. Orton.

Descriptions of UNIONIDÆ from the Lower Cretaceous Formation of New Jersey.

BY ISAAC LEA.

Prof. Cope very kindly placed in my hands the specimens of *Unionidæ* which he collected in a bed of *bluish clay*, now first observed to contain them, about six miles north-east of Camden, N. J. This bed is subordinate to the *Green Sand*, so long known to our geologists as belonging to that portion of the Cretaceous group which furnished so many interesting organic remains within the last forty years, particularly the *Hadrosaurus Foulkii*, Leidy, and the *Laelaps aquilunguis*, found by Prof. Cope. The same member of the *Green Sand Formation* has been very productive also of marine *mollusca*, some of which I described in our Proceedings from the beds near Haddonfield, N. J. But, as observed above, no *fresh water* remains had been found in these cretaceous beds there, and the unexpected development of these *Unionidæ* by Prof. Cope, it is hoped, may lead to other and more extensive results.

These interesting beds in New Jersey have only yet had a very slight development. They will, no doubt, continue to yield their natural treasures to the industrious investigator for many years. The late Prof. Vanuxem, as early as 1818, while examining the Paris basin, was convinced that these New Jersey beds had their equivalent in the *Green Sand* of Europe; and subsequently, in 1828, his notes were published in the Journal of the Academy, where he gave a table of their "relative geological position."

Prof. Cope procured nearly forty specimens of *Unionidæ*, and these are composed of ten species, viz.: eight *Uniones* and two *Anadontæ*. These consist almost altogether of casts, but the forms are well preserved, and in some specimens the inner layers of the nacre are remaining in fragments. These fragments, submitted to the microscope, exhibit the imbricated structure as developed by Prof. Carpenter in the *Unionidæ*, but I could not detect any of that portion of the outer structure of the nacre where the base membrane is deposited in the peculiar cellular structure described and figured in his work. The impress of the muscular cicatrices is visible in many of the specimens. These cicatrices being placed in their usual positions, shewing even the dorsal and pallear scars. While all the massive structure of the cardinal and lateral teeth have been decomposed and carried off, their impress in the clay remains perfect, showing the same forms and striæ which are found in the massive cardinal and lamellar teeth of our western species.

As there are no characters of the shell itself left in any one of the specimens, to designate specific differences, either by form of teeth, color of nacre, or epidermal rays, it remains only to take the outline, transverse diameters, and general curves, to group these specimens. In so doing, I have made these groups conform to the most known species, and named them accordingly. Among these specimens I have noticed none which have nodules or folds, while there is a general resemblance in size and form to those now inhabiting the rivers of the Ohio basin.

As the bed in which these fresh-water shells are found lies below the well-known deposits of "green sand or marl beds," it becomes a very interesting question as to its relations to these superimposed beds. Further investigation can alone give us the data to settle this point. In finding these fresh-water *molluscs* here, we are naturally brought to consider how far they may have relation to the products of those deposits in Europe, where the same genera of

[June,